than its neighbor. Consequently, when two or more were included in one bandage, the finger that was healing most rapidly was being limited in motion and held back by the others. So, to allow freer movement, I started bandaging each finger separately. From that moment they became more comfortable. Two or more fingers bandaged together are held rather stiffly. The same fingers bandaged separately may be moved independently of each other, and much nerve-wracking muscular tension thereby be avoided.

Wrap up even a normal finger for weeks and months, and you are sure to get muscular atrophy and stiffness. If the finger is not normal, but is burned or infected, you have, in addition, a certain amount of destruction of tissue with scar formation. In my case the cicatricial tissue was on the dorsal surface. Consequently, it was not only difficult to flex my fingers, but also very painful, for the tissues did not "stretch" well. Quite evidently the thing to do was to begin passive and active motion as soon as possible. Bandaging each finger separately aided in carrying out these exercises. But I did not stop there. I began to crowd my bandages farther and farther towards the ends of my fingers. When healing had progressed to the point where I could leave the first joint uncovered, I applied my bandage distal to that joint. Thus I allowed motion in the first joint, and the stiffness disappeared more rapidly. The same applied to the second joint. The soreness and infection, lingering longest about the nails, necessitated keeping the nail covered longer than the rest of the finger. But there was no sense in bandaging the whole finger just to cover the nail, for, in so doing, *two* joints would be immobilized. It is no trouble to apply a small bandage around the third phalanx and make it stay there. Such a bandage does not interfere with motion, excepting to some extent in the last joint. When the bandage is finally removed the finger has regained its normal function to a much greater extent than with the customary bandage, which limits motion in both the joints.

In place of the recurrent turns of bandage over the end of a finger, which are rather bunglesome if we wish merely to cover the third phalanx, it is quite easy to make a few turns with gauze around the finger, allowing the gauze to project well beyond the end of the finger to form a cylinder of gauze. This cylinder of gauze is turned back over the dorsal surface of the finger and affords a covering for the tip of the finger. It is held in place by a small circular bandage. (See illustrations Nos. 3 and 4.)

There are well-defined rules of bandaging. The rule to "let the bandage go where it wants to go" is one of the best. But with all the rules, each surgeon will develop more or less a technic of his own in applying a bandage. My plea is to make that technic as nearly perfect as possible; to avoid slovenliness in bandaging; to give the subject the thought it deserves. The surgeon who learns to put a bandage on properly will have, as his reward, the consciousness of a job well done. In addition, he will have a grateful patient.

ble to fingers, as the knots are not conspicuous or cumbersome. With this method there is no fear of slipping off. The ring finger is bandaged distal to the second joint, to show that it is not necessary to cover the whole finger when the trouble is confined to the terminal phalanx. The subject used had short terminal phalanges, and the one-inch bandage used encroached somewhat on the second joint. However, the finger could be flexed at that joint. This picture illustrates the method advocated of bandaging the fingers separately and of crowding the bandages towards the ends of the fingers as soon as possible.

Illustration No. 3—Shows cylinder of gauze around distal phalanx and projecting beyond end of finger. When turned back, forms covering for end of finger and pad over nail.

Illustration No. 4—Shows cylinder of gauze turned back. Dressing completed by a turn of the gauze shown in left hand, followed by a few turns of narrow bandage and a strip of adhesive.

TWO YEARS' EXPERIENCE WITH MERCUROCHROME—220 IN OPHTHALMIC THERAPEUTICS.

By M. F. WEYMANN, M. D., Los Angeles, Calif.

In corneal ulcer, if infected, the mercurochrome aids greatly in getting the ulcer clean and seems to stimulate the growth of epithelium as does scarlet red on skin ulcers.

In chronic dacryocystitis where there is a mucopurulent discharge from the sac it may be changed to a simple mucus discharge in a couple of days by the instillation of the mercurochrome solution.

In summing up, one may say that in the 2 per cent solution or mercurochrome we have an unusually non-irritating and penetrating powerful antiseptic for use in ophthalmic therapeutics.

Mercurochrome is not to be thought of as a substitute for any of the well known therapeutic agents which we now possess, but rather as a valuable addition to our present remedies.

Two years ago my attention was called to the use of mercurochrome in a case of serpiginous ulcer of the cornea and the results were so satisfactory that I have used it almost continuously since that time in various other affections. Several facts were noted which may prove of value to those who have not yet used the drug extensively.

Mercurochrome is one of the dye antiseptics, and for this reason is disliked by many ophthalmic surgeons. But if one is careful in its application, staining of the outside surface of the lid may be prevented. Coating the skin surface with vaseline before application helps in this regard, or the stain may be removed by the use of two per cent potassium permanganate solution followed by five per cent oxalic acid solution as recommended by the manufacturers.

I used a two per cent solution of mercurochrome, made up fresh every week, and kept in an amber or blue bottle. Upon instilling a drop of this into the normal eye it is noted that there is no staining of either conjuctiva or cornea. Any mucus present will stain a deep red. Where the corneal epithelium is only so damaged as to stain slightly with flourescin, and the deeper portions of the cornea are normal, there will be no staining with mercurochrome. But if the epithelium is entirely denuded with the corneal substance exposed there will be a deeply stained area. Even though the epithelium be intact over an area of active deep infiltration of the substance the dye will penetrate and stain this affected area.

Clapp and Martin have discussed the use of mercurochrome in gonorrheal ophthalmia, and Lancaster et al in the pyogenic infections. Their results lead them to draw very favorable conclusions. I have found that in the acute catarrhal conjunctivitis cases, particularly those where the pneumococcus is found, the discharge clears up most rapidly under the use of the ordinary silver nitrate solution followed by the mercurochrome, after the excess silver nitrate has been washed away with normal saline. It has also

been the experience of several of the genito-urinary specialists that the silver and mercurochrome solutions seem to have a synergistic action. It is well to get rid of the excess silver for a red precipitate is formed by mixing a mercurochrome and silver nitrate solution, as is also the case with sodium biborate, cocain, atropin, holocain, and zinc sulphate solutions. Boric acid solution gives no precipitate.

In numerous patients whose refractive error was well corrected and whose conjunctiva appeared normal on inspection, although they complained of a burning discomfort or sandy feeling, it was found that the instillation of the mercurochrome solution revealed several areas in the conjunctiva which stained red. These areas were more often to the nasal side and were not due to the presence of mucus, for they could not be wiped off. From the action of the drug in staining a corneal infiltrate it seems reasonable that these areas may be slight subconjunctival infiltrations. At any rate, after the use of mercurochrome for several days the staining would disappear and the patient would become comfortable.

In corneal ulcer, if infected, the mercurochrome aids greatly in getting the ulcer clean and seems to stimulate the growth of epithelium as does scarlet red on skin ulcers. The area of a deep ulcer will stain with mercurochrome long after it has been covered with epithelium and refuses to stain with fluorescin. In these cases the clearing of the opacity seems to be hastened by the daily application of mercurochrome until there is no further staining. In one patient where the ulcer had penetrated to Descement's membrane it was found that this "glass membrane" forming the floor of the ulcer was not penetrated by the mercurochrome, that is, it remained unstained while the walls were deeply colored. No matter how long the application of the drug was continued there was never any permanent staining of the tissues as one gets with the silver preparations. When used in interstitial keratitis the cornea assumes a red stippled appearance because of the staining of the separate areas of infiltration. The penetration of a mercury compound in this condition would theoretically seem desirable and, although there was no method of control but previous experience, it seemed that the clearing of the cornea occurred more promptly when the mercurochrome was used in conjunction with the usual treatment. In phlyctenular keratitis the use of the mercurochrome did not seem to have much influence on the course of the disease.

In trachoma, except in some few patients where the mercurochrome proved to be a definite irritant and had to be discontinued for the patient's comfort, it has acted here as in the treatment of conjunctivitis, as a synergist in combination with silver nitrate. It is especially of value in those cases where there is much discharge.

In chronic dacryocystitis where there is a mucopurulent discharge from the sac it may be changed to a simple mucus discharge in a couple of days by the instillation of the mercurochrome solution. On the next day after the use of the drug the discharge expressed will have a deep red color, indicating the presence of the latter. After probing the duct a few drops of the mercurochrome solution in the saline used for irrigating through into the nose will help to prevent infection and by its color will tell if the solution passes to the nose. In order to see if any reaction would occur should the dye pass into the tissue, several minims of the two per cent solution were injected beneath the conjunctiva of a globe that was to be later removed for absolute glaucoma. There was some pain at the site of the injection and slight edema occurred. But within three days the red color had entirely disappeared and the area appeared as before injection. Since that time there have been two cases in which the solution used as above has passed out into the tissues of the cheek after probing. There was immediately rather severe pain which was controlled by cold applications, there was rather marked edema, but the entire condition cleared within three days in both cases and left no trace of any staining. The temporary discomfort of the patient was the only complication, while had a silver preparation been used, there would have been permanent discoloration.

In summing up, one may say that in the two per cent solution of mercurochrome we have an unusually non-irritating and penetrating powerful antiseptic for use in ophthalmic therapeutics. It acts as a synergist with the silver nitrate solutions, and because of its penetrating power we are furnished with an agency better than any we have previously had for the treatment of infiltrated areas beneath the epithelium of the cornea and conjunctiva. And, best of all, no permanent staining results even after its long continued use.

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DISCUSSION

A. Ray Irvine, M. D. (Westlake Professional Building, Los Angeles)—Mercurochrome has given great satisfaction to me in many cases during the past two years. In dacryocystitis the pus is soon lessened in amount and character, and many acute cases soon clear up entirely.

In pneumococcus and Koch-Weeks bacillus infections, the ethylhydrocuprein and zinc solutions still have first place, but in many forms of conjunctivitis, mercurochrome, as Dr. Weymann uses it, has proven a valuable therapeutic agent with many advantages.

I have had occasion to use it in a large series of folliculosis cases as an adjunct to the silver and zinc sulphate treatment. In those cases in which there was a considerable amount of secretion, the one per cent mercurochrome solution proved of great value.

My experience in its use in ulcers of the cornea has been much the same as Dr. Weymann's.

Lloyd Mills, M. D. (927 Citizens National Bank Building, Los Angeles)—The place of mercurochrome in ophthalmology is not yet defined, but our clinical and laboratory experience proves it to be an addition of value in the treatment of some pyogenic infections of the conjunctiva and of the tear-passages. This experience, however, also shows that mercurochrome lacks the bactericidal and serological potency of silver nitrate, which it can never supplant in the treatment of gonococcic infections. Nor can mercurochrome replace zinc or copper salts in their particular roles.

Mercurochrome appears to give the greatest service in the less virulent conjunctival infections, with or without simple ulceration about the limbus, and as a follow-up treatment where silver nitrate, strong zinc or cabolic acid cauterization, or the actual cautery, have checked severer infection of the conjunctiva and have mastered progressive and intractable ulcerations of the substantia propria of the cornea. Its virtue in so-called catarrhal conjunctivitis and catarrhal ulcers, whether of staphylococcic origin or

due to weak strains of pneumococci or streptococci, is unquestioned. A considerable experience as a reviewer of the end results of true serpent ulcers which have been variously treated by many different men, however, convinces me that precious time and more precious visual acuity too often are lost by attempting to check these virulently progressive ulcerations by instilling solutions such as mercurochrome, ethylhydrocuprein, subconjunctival injections and the like, when strong chemical cauteries, or the more effective actual cautery, should have been used with a bolder conservatism at the first evidence of intractability.

The local use of mercurochrome in infections of the tear-passages should be limited, in my opinion, to those early or chronic cases where ulceration, or its resulting stenosis, are too far advanced and where no great tubal thickening has occurred. Here infection may be checked and stricture prevented by the careful use of sounds when the infection is overcome, and only then. If sounds are passed forcibly and strictures are divulsed or false passages created, mercurochrome naturally will pass into the surrounding tissues. If irrigation seems indicated after such severe instrumentation (and it usually is not) I prefer to use mercuric cyanide rather than a solution which is so vividly dramatic in its subcutaneous appearances as is mercurochrome. In fact, in the majority of cases of chronic dacryocystitis irrigations of any sort can seldom be more than palliative and recurrence is usually merely a matter of time, as the mucous tube is thickened, stenosed and usually is impossible to keep patent for any long period. In such cases mercurochrome is of particular value as a preparation for the needed extirpation of the naso-lachrymal duct.

Dr. Weymann's observation that mercurochrome increases the effect of silver nitrate is of great interest and value, and his application of the remedy to the lesions of interstitial keratitis with benefit is worthy of extended trial and study.

Howard Black (627 University Avenue, Palo Alto) —I have used mercurochrome for about two years and feel that it has an established place in ophthalmic therapeutics. My preference is for a one per cent solution except in the more severe infections, such as gonorrheal ophthalmia, where a two per cent solution is used. In cases of acute catarrhal conjunctivitis, especially where there is a good deal of discharge, I have found the home use of mercurochrome solution a great help, but never as supplanting silver nitrate solutions, which are still my sheet anchor. I believe with Dr. Weymann, that in such cases the mercurochrome and silver nitrate solutions have a synergistic action. In gonorrheal conjunctivitis, of which I see but few cases nowadays, I am sure mercurochrome in two per cent solution, instilled every hour or two, in addition, of course, to the office use of silver nitrate, has definitely shortened the period of active inflammation and lessened the likelihood of corneal complications. In cases of trachoma with much secretion I have found that mercurochrome enhances the effect of silver nitrate, the latter being used in four per cent solution every third day by the "dry method," and the mercurochrome used at home several times a day. In some cases of folliculosis I have found mercurochrome very helpful, following the four per cent solution of silver nitrate.

In recurrent sties mercurochrome is of value in permanently clearing up the condition when used in one per cent solution in conjunction with hot fomentations during the day and applied as a one per cent ointment with massage to edges of lids each night. The same strength ointment is useful also in some stubborn cases of marginal blepharitis.

My use of mercurochrome in affections of the tear-passages has been limited to cases of acute decryocystitis, some of which it has cleared up very quickly, and to those mild chronic cases where a slight amount of mucoid secretion persists despite a sufficiently patent canal as result of probing. In such cases the injection into the sac of a one per cent mercurochrome ointment once or twice weekly and the home use of mercurochrome solution have nearly always proved successful in finally clearing up the condition.

In infected corneal ulcers I never delay the use of chemical cauterants or even the actual cautery, but am very fond of the home use of mercurochrome solution if the eye is treated by the "open method," or by filling the cul de sac with one per cent mercurochrome ointment if the eye be tied up.

I find myself using mercurochrome more and more in place of the time-honored bichloride where an ointment is required in corneal injuries, after the removal of foreign bodies, etc. I think by this change I am getting quicker healing and less permanent opacity, thus being in accord with Dr. Weymann's statement as to the value of mercurochrome in clearing corneal infiltration. In the recent corneal opacities following injury or the "tail-end" clearing of a case of interstitial keratitis I am in the habit of having the patient apply the one per cent mercurochrome ointment with massage once daily. I admit that the staining of the skin when mercurochrome is used in this way is rather annoying to fastidious patients, but if its need is explained, few will make complaint.

Dr. Weymann (closing) — I agree that mercurochrome is not to be thought of as a substitute for any of the well known therapeutic agents which we now possess, but rather as a valuable addition to our present remedies. In the serpiginous ulcers the advancing portion must be halted by destroying the pneumococci in the substance of the cornea, preferably by the thermophore of Shahan, before relying on a solution of mercurochrome to clean up the area. I have never found the two per cent solution more irritating than the one per cent, and have found the former more efficient in its action. As mentioned by Dr. Mills, the solution is ideal for pre-operative antisepsis. I am quite in accord with Dr. Black when he says that he prefers the use of mercurochrome to that of mercury bichloride as I think it is less irritating and more effective as a preventive of infection.

Necessary Scope of the State's Regulation to Make All Doctors Competent—Harry E. Kelly of the Chicago bar, in his article on Regulation of Physicians by law, says: "The state should go no further in restricting the occupation of the physician than necessary, for freedom of action is the goal of the law. What is the least that the state may do in this respect? It is apparent that, logically, it may do nothing less than make it impossible for any person to hold himself out professionally to the public as a healer of any kind until he has demonstrated before some legally constituted authority ample knowledge of the structure and functions of the human body, of its various organs in health and disease, and of all of the valuable remedial agencies known to the world, and prohibit any person from holding himself out as a healer of diseases who has not so demonstrated his ability to discover, within the reasonable limits of the advancement of science, the nature of the disease with which human beings are commonly afflicted, to care for his patients in a scientific manner, and to recognize and prevent the spread of contagious diseases. Manifestly, the state has done nothing until it has thus supplied a doctor with such scientific knowledge and skill."

"Few human passions are stronger than vanity, and there are not many men whose love of truth is so compelling that they can stand up and confess to their fellows that the studies to which they have devoted many years are futile," says Major Greenwood (Lancet).

"Jealousy," says Joseph Collins in The Bookman, "instead of being the exaggeration of one of the most uplifting passions of men, is a pathological condition which fits the possessor for a psychopathic ward and the object for a sanatorium."